Information Disclosure Statement By Applicant

(Use Several Sheets if Necessary)

Atty Docket No.:
IMM1P044A

A

Application No. 09/678,110

Applicant:

Rosenberg et al.

Filing Date:

Group:

RECEIVED

10/2/01

2675

JCL 1 4 2001

U.S. Patent Documents

Technology Center 2600

Examiner						Sub-	Filing
Initial		Patent No.	Date	Patentee	Class	Class	Date
	*	3,919,691	11/11/75	Noll	340	172.5	5/26/71
	*	4,050,265	9/27/77	Drennen et al.	64	11	8/3/76
	*	4,131,033	12/26/78	Wright et al.	74	553	2/18/77
	*	4,477,043	10/16/84	Repperger	244	223	12/15/82
	*	4,560,983	12/24/85	Williams	340	825	9/17/82
		4,692,756	9/8/87	Clark	340	709	7/5/84
	*	4,706,294	11/10/87	Ouchida	381	109	6/10/86
	*	4,712,101	12/8/87	Culver	340	710	12/4/84
DOD	*	4,782,327	11/1/88	Kley et al.	340	365	1/2/85
	*	4,795,296	1/3/89	Jau	414	5	11/17/86
MAKO	*	4,800,721	1/31/89	Cemenska et al.	60	393	2/13/87
	*	4,823,634	4/25/89	Culver	74	471	11/3/87
(CADA)	*	4,868,549	9/19/89	Affinito et al.	340	710	5/18/87
	*	4,935,728	6/19/90	Kley	340	709	11/20/87
CANA	*	4,943,866	7/24/90	Barker et al.	358	335	6/16/89
	*	4,964,004	10/16/90	Barker	360	14.1	6/16/89
	*	4,979,050	12/18/90	Westland et al.	360	14.1	12/2/83
UNORQ!	*	4,983,901	1/8/91	Lehmer	318	685	4/21/89
	*	5,007,300	4/16/91	Siva	74	471	1/22/90
DILLO	*	5,044,956	9/3/91	Behensky et al.	434	45	1/12/89
	*	5,095,303	3/10/92	Clark et al.	345	164	
	*	5,107,080	4/21/92	Rosen	200	6	12/1/89
CACA	*	5,138,154	8/11/92	Hotelling	250	231.12	4/4/90
1010N	*	5,139,261	8/18/92	Openiano	273	148	9/18/91
	*	5,146,566	9/8/92	Hollis, Jr. et al.	395	275	5/29/91
	*	5,185,561	2/9/93	Good et al-	318	432	7/23/91
UDAD	*	5,186,629	2/16/93	Rohen	434	114	8/22/91
	*	5,189,355	2/23/93	Larkins et al.	318	685	4/10/92
DIAM	*	5,193,963	3/16/93	McAffee et al.	414	5	10/31/90
CION	*	5,204,600	4/20/93	Kahkoska	318	602	2/6/91

Examiner:

Date Considered:

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Information Disclosure
Statement By Applicant

(Use Several Sheets if Necessary)

Atty Docket No.:
IMM1P044A

Application No.: 09/678,110

Applicant:

Rosenberg et al.

Filing Date:

Group:

RECEIV

10/2/01

2675

1 4 2001

U.S. Patent Documents

Technology Center 2600

Examiner						Sub-	Filing
Initial		Patent No.	Date	Patentee	Class	Class	Date
TIMO	*	5,220,260	6/15/93	Schuler	318	561	10/24/91
UND	*	5,223,776	6/29/93	Radke et al.	318	568.1	12/31/90
MIND	*	5,235,868	8/17/93	Culver	74	471	10/2/91
CANDAT		5,237,327	8/17/93	Saitoh et al.	341	176	11/14/91
CHINO	*	5,254,919	10/19/93	Bridges et al.	318	560	3/22/91
CHANI	*	5,280,276	1/18/94	Kwok	345	167	7/10/92
CHON	*	5,296,846	3/22/94	Ledley	345	161	10/5/92
CNOW	*	5,296,871	3/22/94	Paley	345	163	7/27/92
	*	5,313,230	5/17/94	Venolia et al.	345	163	7/24/92
	*	5,317,336	5/31/94	Hall	345	164	1/23/92
	*	5,355,148	10/11/94	Anderson	345	166	1/14/93
UCID	*	5,374,942	12/20/94	Gilligan et al.	345	157	8/12/93
DVV	*	5,381,080	1/10/95	Schnell et al.	318	566	2/18/93
	*	5,389,865	2/14/95	Jacobus et al.	318	568.11	12/2/92
ION	*	5,396,266	3/7/95	Brimhall	345	161	6/8/93
MAKO	*	5,398,044	3/14/95	Hill	345	145	12/7/93
	*	5,405,152	4/11/95	Katanics et al.	273	438	6/8/93
	*	5,414,337	5/9/95	Schuler	318	561	6/11/93
CMM I	*	5,457,479	10/10/95	Cheng	345	163	6/13/94
ORON	*	5,473,344	12/5/95	Bacon et al.	345	163	
(NOW)	*	5,477,237	12/19/95	Parks	345	156	7/14/94
	*	5,491,477	2/13/96	Clark et al.	341	20	9/13/93
	*	5,513,100	4/30/96	Parker et al.	364	167.01	6/10/93
	*	5,530,455	6/25/96	Gillick et al.	345	163	8/10/94
CAIN	*	5,541,379	7/30/96	Kim	200	566	1/18/95
MICHO	*	5,542,672	8/6/96	Meredith	463	37	3/17/95
	*	5,543,821	8/6/96	Marchis et al.	345	167	7/20/94
	*	5,576,727	11/19/96	Rosenberg et al.	345	179	6/5/95
CAN	*	5,589,828	12/31/96,5	Armstrong	341	20	3/5/92
UNIV	*	5,589,854	12/31/96	Tsai	345	161	6/22/95

Examiner: Date Considered:

Examiner: Initial criation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Information Disclosure **Statement By Applicant**

(Use Several Sheets if Necessary)

Atty Docket No.: **IMM1P044A** **Application No.:** 09/678,110

Applicant:

Rosenberg et al.

Filing Date:

Group: 10/2/01

2675

U.S. Patent Documents

DEC 1 4 2001
Technology Center 2600

Examiner			T			Sub-	Filing
Initial		Patent No.	Date	Patentee	Class	Class	Date
	*	5,591,082	1/7/97	Jensen et al.	463	38	1/5/95
HANNA!	*	5,623,582	4/22/97	Rosenberg	395	99	7/14/94
LANGE A	*	5,625,576	4/29/97	Massie et al.	364	578	10/1/93
HANNEY!	*	5,627,531	5/6/97	Posso et al.	341	22	9/30/94
	*	5,642,469	6/24/97	Hannaford et al.	395	99	11/3/94
	*	5,643,087	7/1/97	Marcus et al.	463	38	7/29/94
	*	5,656,901	8/12/97	Kurita	318	436	4/21/95
	*	5,666,138	9/9/97	Culver	345	161	11/22/94
	*	5,666,473	9/9/97	Wallace	345	420	10/8/92
THE STATE OF THE S	*	5,691,747	11/25/97	Amano	345	167	12/19/94
HA 1	*	5,691,898	11/25/97	Rosenberg et al.	364	190	3/28/96
	.,	5,696,537	12/9/97	Solhjell	345	164	6/20/91
	*	5,709,219	1/20/98	Chen et al.	128	782	8/1/96
	*	5,712,725	1/28/98	Faltermeier et al.	345	164	3/1/30
	*	5,714,978	2/3/98	Yamanaka et al.	345	157	12/5/95
THE WAY	*				345	161	6/9/95
MY W	*	5,721,566	2/24/98	Rosenberg et al.		161	9/7/95
	·	5,724,068	3/3/98	Sanchez et al.	345		9/1/93
	*	5,724,106	3/3/98	Autry et al.	345	734	10/1/05
MANA	*	5,734,373	3/31/98	Rosenberg et al.	345	161	12/1/95
	*	5,736,978	4/7/98	Hasser et al.	345	173	5/26/95
	*	5,742,278	4/21/98	Chen et al.	345	156	11/1/95
DICAV	*	5,745,057	4/28/98	Sasaki et al.	341	35	9/24/96
DAYU	*	5,749,577	5/12/98	Couch et al.	273	148	5/31/95
CALU	*	5,754,023	5/19/98	Rosten et al.	318	561	10/22/96
NAM	*	5,755,577	5/26/98	Gillio	434	262	7/11/96
UCID	*	5,760,764	6/2/98	Martinelli	345	160	12/13/95
CHONO	*	5,767,839	6/16/98	Rosenberg	345	161	3/3/95
DUND	*	5,781,172	7/14/98	Engel et al.	345	164	
MILI	*	5,787,152	7/28/98	Freadman	379	88.01	
MALIA	*	5,790,108	8/4/98	Salcudean et al.	345	18425	10/23/92

Date Considered: Examiner:

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Information Disclosure **Statement By Applicant**

(Use Several Sheets if Necessary)

Atty Docket No.: **IMM1P044A** **Application No.:** 09/678,110

Applicant:

Rosenberg et al.

Filing Date:

10/2/01

Group:

U.S. Patent Documents

Technology Center 2600

Examiner						Sub-	Filing
Inițial		Patent No.	Date	Patentee	Class	Class	Date
	*	5,805,140	9/8/98	Rosenberg et al.	345	161	11/17/95
	*	5,808,568	9/15/98	Wu	341	20	
	*	5,808,603	9/15/98	Chen	345	157	2/6/97
CAM		5,821,921	10/13/98	Osborn et al.	345	157	8/9/96
NOTION	*	5,823,876	10/20/98	Unbehand	463	37	5/3/96
	*	5,825,308	10/20/98	Rosenberg	341	20	11/26/96
	*	5,831,408	11/3/98	Jacobus et al.	318	568.11	5/12/97
UKKON		5,831,593	11/3/98	Rutledge	345	156	1/16/96
	*	5,841,428	11/24/98	Jaeger et al.	345	184	9/20/96
	*	5,889,506	3/30/99	Lopresti et al.	345	158	10/25/96
	*	5,889,670	3/30/99	Schuler et al.	364	186	1/11/96
MIKE		5,897,437	4/27/99	Nishiumi et al.	463	47	10/8/96
	*	5,912,661	6/15/99	Siddiqui	345	166	
		5,914,705	6/22/99	Johnson et al.	345	163	2/9/96
	*	5,944,151	8/31/99	Jakobs et al.	188	267.1	7/9/96
		5,956,016	9/21/99	Kuenzner et al.	345	156	3/19/97
	*	5,959,613	9/28/99	Rosenberg	345	161	11/13/96
		5,973,670	10/26/99	Barber et al.	345	157	12/31/96
	*	5,990,869	11/23/99	Kubica et al.	345	163	2/19/97
		6,001,014	12/14/99	Ogata et al.	463	37	9/30/97
		6,088,017	7/11/00	Tremblay et al.	345	156	4/24/98
		6,100,874	8/8/00	Schena et al.	345	157	6/24/97
DAIN!		6,154,201	11/28/00	Levin et al.	345	184	10/26/98
		6,166,723	12/26/00	Schena et al.	345	184	11/7/97
MONO		6,184,868	2/6/01	Shahoian et al.	345	161	9/17/98
		6,225,976	5/1/01	Yates et al.	345	156	10/30/98
DIGITAL		6,256,011	7/3/01	Culver	345	157	12/1/98
DONO		6,300,938	10/9/01	Culver	345	156	4/12/99
				1		الرابع	
			- (. ·	

Date Considered Examiner

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form 1449 (Modified) Information Disclosed France Statement By Applicant

Atty Docket No.: Application No.: 09/678,110

Applicant:

Rosenberg et al.

RECEIVED

(Use Several Sheets if Necessary)

Filing Date:

10/2/01

Group:

2675 DEC 1 21

Foreign Patent or Published Foreign Patent Application

Technology Center 2600

Initial	Examiner	ner Document Publication Country or			Sub-	Trans	lation		
* WO9731333	Įnitial /		No.	Date	Patent Office	Class	class	Yes	No
* 0626634A2 30.11.94 EPO X WO9520788 8/3/95 PCT G06F X WO9532459 11/30/95 PCT G06F X S75819A1 2/13/98 EPO G06F X O607580A1 27.07.94 EPO X WO00/03319 20.1.2000 PCT X S75819A1 27.04.88 EPO	CIM	*	WO9721160	6/12/97	PCT	G06F		X	
* WO9520788 8/3/95 PCT G06F — X * WO9532459 11/30/95 PCT G06F — X * 875819A1 2/13/98 EPO G06F — X 0607580A1 27.07.94 EPO — X 0265011 27.04.88 EPO — X WO00/03319 20.1.2000 PCT — X	MADO	*	WO9731333	8/28/97	PCT	G06K		X	
* WO9532459 11/30/95 PCT G06F — X * 875819A1 2/13/98 EPO G06F — X 0607580A1 27.07.94 EPO — X 0265011 27.04.88 EPO — X WO00/03319 20.1.2000 PCT — X	W.M.C.	*	0626634A2	30.11.94	EPO			X	
* 875819A1	(NADO)	*	WO9520788	8/3/95	PCT	G06F	<u> </u>	X	
0607580A1 27.07.94 EPO X 0265011 27.04.88 EPO X WO00/03319 20.1.2000 PCT X		*	WO9532459	11/30/95	PCT	G06F		X	
0265011 27.04.88 EPO X W000/03319 20.1.2000 PCT X	CION	*	875819A1	2/13/98	EPO	G06F		X	
WO00/03319 20.1.2000 PCT X	CACKET		0607580A1	27.07.94	EPO			X	
	(CACA)		0265011	27.04.88	EPO			X	
	000		WO00/03319	20.1.2000	PCT			X	
	-								
	•								
	•								
				<u> </u>					
	·								
				B	91			مسرسرد	
				AST TO SERVICE			Service Servic		

Examiner: Date Considered: Date Considered:

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Information Disclosions
Statement By Applicant

(Use Several Sheets if Necessary)

Atty Docket No.:

IMM1P044A

Application No.: 09/678,110

Applicant:

Rosenberg et al.

Filing Date:

Group:

10/2/01

2675

Other Documents

DEC 1 4 2001

Examiner		Technology Center Author, Title, Date, Place (e.g. Journal) of Publication
Initial		Author, Title, Date, Place (e.g. Journal) of Publication
wat	*	
	*	Ellis et al., "Design & Evaluation of a High-Performance Prototype Planar Haptic Interface," 1993, ASME, Vol. 49, pg. 55-64.
	*	Munch et al., "Intelligent Control for Haptic Displays," 1996, Eurographics, Vol. 15. No. 3, pg. C-217-C-226.
	*	Ramstein, "Combining Haptic & Braille Technologies: Design Issues & Pilot Study, 4/11/96, ACM Conf. On Asst. Tech., pg. 37-44
	*	Payette et al., Evaluation of a Force Feedback (Haptic) Computer Pointing Device in Zero Gravity, 10/17/96, ASME Dynamic Systems, Vol. 58, pg. 547-553
		Maryland, pg. 387-393
		Batter et al., "Grope 1: A Computer Display to the Sense of Feel," 1971, IFIP Congress, pg. 759-763.
	1	Hayward et al., "Design & Multi-Objective Optimization of a Linkage for a Haptic Interface," 1994, Advances in Robot Kinematics, pg. 359-368.
	*	Kelley et al., "MagicMouse: Tactile and Kinesthetic Feedback in the Human-Computer Interface using an Electromagnetically Actuated Input/Out Device," 1993, University of Brit. Col., pg. 1-27.
-	*	Wiker et al., "Development of Tactile Mice for Blind Access to Computers", 1991, Proceedings of Human Factors Society, pgs. 708-712.
	*	Hannaford et al., "Force Feedback Cursor Control," 1989, NASA Tech Brief, Vol. 13, pg. 1-4.
	*	Buttolo et al., "Pen-Based Force Display for Precision Manipulation in Virtual Environments," 1995, IEEE, pgs. 217-224.
	*	Adachi et al., "Sensory Evaluation of Virtual Haptic Push-Buttons," 1994, Technical Research Center, Suzuki Motor Corp., pgs. 1-8.
	*	Gotow et al, "Perception of Mechanical Properties at the Man-Machine Interface," 1987, IEEE, pgs. 688-689.
	*	Mechatronics, and Haptic Interfaces, Vol. 49, pgs. 47-54.
	*	Control Research," 1992, NASA Ames Research Center, pgs. 1-25.
	*	Atkinson et al., "Computing with Feeling, Computing & Graphics," Vol. 2, 1977, pg 97-103.
		Millman et al., "Design of a Four Degree-of-Freedom Force-Reflecting Manipulandum with a Specified Force/Torque Workspace," 1991, IEEE CH2969-4, pgs. 1488-1492.
	*	Howe et al., "Task Performance with a Dextrous Teleoperated Hand System," 1992, SPIE, Vol. 1833, pgs. 1-9.
	*	Russo, "The Design and Implementation of a Three Degree-of-Freedom Force Output Joystick," Dept. of Mech. Engineering, 1990, pgs. 8-42.

Examiner:

Date Considered:

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form 1449 (Modified) Information Disclosure Statement By Applican

Atty Docket No.: IMM1P044A **Application No.:** 09/678,110

Applicant:

Rosenberg et al.

Filing Date:

Group:

(Use Several Sheets if Necessary)

10/2/01

2675 RECEIVED

Other Documents.

DEC 1 4 2001 hnology Center 2600

Exar	miner		Technology Cen Author, Title, Date, Place (e.g. Journal) of Publication
Ini	itial 🥤		Author, Title, Date, Place (e.g. Journal) of Publication
		*	Iwata, H., "Artificial Reality with Force-Feedback: Development of Desktop Virtual Space with Compact Master Manipulator," 1990, Computer Graphics, Vol. 24, pgs 165-170.
		*	Rosenberg, L., "The Use of Virtual Fixtures to Enhance Operator Performance in Time Delayed Teleoperation," 1993, Wright-Patterson AFB, pgs. 1-45.
		*	Rosenberg, L., "Perceptual Design of a Virtual Rigid Surface Contact," 1993, Center for Design Research, Wright-Patterson AFB, pgs. 1-40.
		*	Hirota et al., "Development of Surface Display," 1993, IEEE 0-7803-1363-1, pgs. 256-262.
			Brooks Jr., et al., "Project GROPE-Haptic Displays for Scientific Visualization," 1990, Computer Graphics, Vol. 24, pgs. 177-185.
		*	Rosenberg, L., "A Force Feedback Programming Primer," Immersion Corp., 1997, pgs. 1-176.
			Fischer et al., "Specification and Design of Input Devices for Teleoperation," 1990, IEEE CH2876-1, pgs. 540-545.
			Computer Interaction," 1994, Computer-Human Interaction CHI '94, pgs. 1-3.
			Minsky et al., "Feeling & Seeing: Issues in Force Display," 1990, ACM 089791-351-5, pgs. 235-270.
			Rosenberg et al., "Commercially Viable Force Feedback Controller for Individuals with Neuromotor Disabilities," 1996, Wright Patterson AFB, pgs. 1-33.
			Colgate et al., "Implementation of Stiff Virtual Walls in Force-Reflecting Interfaces," 1993, Dept. of Mech. Engineering, Northwestern University, pgs. 1-7.
\bigvee		*	Rosenberg et al., "The Use of Force Feedback to Enhance Graphical User Interfaces," 1996, Proc. SPIE 2653, pgs. 243-248.
		ļ	
			• •

Date Considered: Examiner:

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.